We claim:

1. A method of mounting optical devices, comprising:

forming a mounting system, where the mounting system is formed by, etching substrate(s) to form a recess to receive a reference optical element, where the recess at least partially conforms to the shape of the reference optical element, attaching the reference optical element to the recess in the substrate, and etching the substrate(s) to expose the reference optical element and to create etched structures upon which optical devices can be attached; and

attaching at least one optical device(s) to at least a portion of the etched structures.

2. A method of alignment and attachment of optical devices comprising:

etching at least one recess into a first optical device, wherein the recess at least partially conforms to at least one reference optical element of a second optical device; and

attaching and aligning the first optical device to the second optical device by attaching the reference optical element to said recess.

3. The method according to claim 1, further comprising:

covering a predetermined amount of said structures with a filling compound.

4. The method according to claim 1, wherein at least said first optical element is etched by the grayscale etching process.

5. The method according to claim 1, wherein at least said reference optical element is formed by the reflow process.

6. The method according to claim 1, wherein said attaching is accomplished by an adhesive layer.

7. The method according to claim 1, wherein said attaching is accomplished by anodically bonding.

8. The method according to claim 6, wherein said adhesive layer is Bensocyclobutene.

9. The method according to claim 1, wherein the etching is by at least one of the RIE process, the DRIE process, and a wet etching process.

10. The method according to claim 3, wherein said filling compound is a low-index of refraction potting compound.

11. The method according to claim 3, wherein said filling compound is Epoxy-

Master Bond EP19HT.

12. The method according to claim 1, wherein the size of said optical device(s) is(are) between 1 meter and 1 nanometer.

13. The method according to claim 1, wherein the size of said optical device(s) is(are) between tens of centimeters and 1 nanometer.

14. The method according to claim 1, wherein the size of said optical device(s) is(are) between several millimeters and 1 nanometer.

15. A multi-optical element device comprising.

at least a reference optical element;

a mounting system, wherein said mounting system is formed by etching substrate(s) to form a recess to receive a reference optical element, where said recess at least partially conforms to the shape of said reference optical element, and where said reference optical element is attached to said recess in said substrate, said mounting system contains etched substrate(s) forming etched structures upon which optical devices can be attached; and

at least a first optical element attached to a predetermined structure of said etched structures.

16. The multi-optical element device according to claim 15, wherein said

reference optical element and/or said first optical element are made from glass.

17. The multi-optical element device according to claim 15, wherein said reference optical element and/or said first optical element are made from GaP .

18. The multi-optical element device according to claim 15, wherein said etched structure is covered with a filling compound to change the index of refraction.

19. The multi-optical element device according to claim 18, wherein the filling compound is Epoxy-Master Bond EP19HT.

20. The multi-optical element device according to claim 15, wherein the size of said reference and first optical elements are between 1 meter and 1 nanometer.

21. The multi-optical element device according to claim 15, wherein the size of said reference and first optical elements are between tens of centimeters and 1 nanometer.

22. The multi-optical element device according to claim 15, wherein the size of said reference and first optical elements are between several millimeters and 1 nanometer.

23. The multi-optical element device according to claim 15, wherein the

size of said reference and first optical elements are between several millimeters and 1 nanometer.